The first lady geologist, or collector par excellence?

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During the 18th and 19th centuries, many upper class ladies and gentlemen were collectors of antiquities of all kinds. Perhaps one of the most famous was Sir William Hamilton, ambassador to the Kingdom of Naples (1764-1800) and the husband of Emma Hamilton, who befriended Lord Nelson. Sir William not only collected antiquities (mainly from Pompeii) but also produced some interesting observations and illustrations on Vesuvius. While some of the rich and leisured merely looked at their collections for pleasure, others, such as Sir William, undertook scientific research. In fact, collecting antiquities could be considered the first phase of the rise of 'Nature Studies' as a science fulfilling the required observation, duplication and deduction processes.

Several ladies also indulged in natural history, collecting shells, flowers and minerals. Others collected fossils. For example, the Philpott sisters of Lyme Regis and friends of Mary Anning collected and displayed their fossils in museums, whilst others undertook research and illustrated their collections, occasionally even being paid to do so. (Mary Morland, who featured in my last article - *Geology Today*, v.17, p.110, 2001 - is a case in point). In fact, many ladies first approached the wider study of geology through palaeontology. Arguably, one of the first was Etheldred Benett.

Etheldred Benett (1776-1845)

Etheldred Anna Maria Benett (Fig. 1) was born in Tisbury, Wiltshire, in 1776, as Adam Smith published his Wealth of Nations and the 13 American colonies declared their independence. She was the daughter of Thomas Benett, a country squire. Her interest in natural history came about because of her brother's marriage to Lucy Lambert. Lucy's half brother, Aylmer Bourke Lambert, was a founding member of the Linnean Society (1788), a Fellow of the Royal Society and the Society of Arts (1791), and a member of the

Geological Society of London (1808). He was also a collector of fossils and an avid proponent of William Smith's discoveries concerning stratigraphy. He met White Watson, the Bakewell stonemason in Derbyshire, himself a member of the Linnean Society, in August 1793, conceivably about the illustrated catalogue of Carboniferous limestone fossils of Derbyshire that White Watson was compiling. White Watson was also developing around this time a reputation for his tablets of stone. Etheldred must have heard of his famous tablets of marble (a misnomer for the Ashford limestone, which is not a marble at all but a hard, dark limestone) inset with samples of stone illustrating cross-sections of mountains in Derbyshire, although there is no firm evidence that she ever met him.

With such a wealth of knowledge in the family, Etheldred's interest in palaeontology and stratigraphy grew. Geologists were already visiting her in 1809, as shown in correspondence. She never married and was financially independent; consequently, she had ample time to devote to her scientific research and become an expert on fossil sponges (Fig. 2), as well as other taxa within the palaeontology of south Wiltshire.

In 1813, her collection of fossils was recognized for its scientific importance when illustrated in Sowerby's *Mineral Conchology*. It is significant that Etheldred contributed the second highest number of specimens (41) to the material used for illustration within the seven volumes. However, she was not a prolific writer and during her lifetime she only published two articles, both fossil lists from her extensive collection of thousands of Cretaceous and Jurassic specimens, many from the upper Greensand.

E. E. Spamer, A. Bogan and H. Torrens (see Suggestions for further reading) have recently performed the monumental task of bringing to light her collection in Philadelphia and for the first time publishing drawings and photographs of her specimens. However, no one knew this collection like Benett. She was thorough, accurate and precise and she was therefore most disturbed by others who misquoted her work. She complains for example to Greenough in 1822 about Sowerby: 'I have now a second instance of his blundering himself

from his want of confidence in that work, early in the publication of Mineral Conchology he republished no. 28 as the young shell and no. 29 as the old shell of the same species, I proved the error to him by specimens, and he admitted it but never noticed it in a subsequent part of the work that I have seen, and which for his own credit for correctness he ought to have done.' (Benett, 1822).

One of her main claims to fame is that she commissioned and produced one of the first measured sections of the Upper Chicksgrove quarry at Tisbury, or, rather, she instructed her quarry workman, John Montague, to measure them. At that time, many people of gentility talked to and used labourers such as quarrymen and lead miners rather than do the 'dirty' work themselves. The section itself is drawn to scale, but unfortunately there is no scale indicated on the section. She calls it 'The measure of the different beds of stone in Chicksgrove Quarry in the Parish of Tisbury, Wiltshire'; and perhaps to prove that it was her work, she has signed it at the bottom. This was published in April 1816 by Sowerby without her permission and much to her annoyance. She mentions this in a letter to another famous palaeontologist, Sideon Mantell of Sussex, who was working on rocks of similar age and with whom she had extensive correspondence about the similarity in invertebrate fossils from Wiltshire, Somerset and Sussex. However, she had given a copy to the Geological Society of London in 1815 with the assertion: I have not yet been able to ascertain to which of the beds they [the fossils she had collected], respectively, belong and therefore could not insert them in their proper place' (Benett, 1815), a task that eventually takes another year to complete. Perhaps because of this unfortunate occurrence, she herself often acknowledged others who helped her. For example, in a letter dated 1 March 1816 from Norton House, she states: 'These fossils were discover'd by Mr George Warren of Warminster to whom I am indebted for them.'

Her generosity and charity are also noted by both Gideon Mantell and John Murray in two obituaries written in 1846 and 1848, respectively: 'Her never tiring charity and benevolence' and 'Whose scientific excellence was only equalled by her active benevolence'. Her demeanour is further commented on

by Mary Mantell, when she went to Sussex in 1819, as 'very engaging and interesting'. Mary Mantel was at that time only 23 years old, whereas Etheldred was 43. Benett had previously commented to Mary Mantell's husband on her sketching as being 'much pleased with her first attempt at etching' and with 'a little practice to enable her to work stronger and bolder ... all that is wanting to make them a great ornament to your work'. Etheldred Benett has several unique distinctions, not least perhaps her name. This was derived from her grandmother, who was one of the daughters and coheirs of William Wake, Archbishop of Canterbury. Her niece was also called Etheldred-Catherine and she married Lord Charles Spencer Churchill, second son of George, 5th Duke of Marlborough. Thus her aristocratic associations are confirmed.

Benett's contribution to the early history of Wiltshire geology is significant. She met and felt at ease with many famous scientists of her day, both theorists and practitioners. In this respect, she was like Mary Anning, who followed her. Perhaps her unique position allowed her both to correspond with and take on board the ideas of 'laymen' like William Smith. This also applied to professional geologists such as Greenough, the first director of the Geological Survey, and William Buckland, Professor of Geology at Oxford University. She freely gave her ideas and items from her fossil collection to worthy causes such as museums, including sending one to St Petersburg. Following her 'gift' of fossils to the czar, the Emperor of Russia, assuming she was a man because of her first name, conferred on her an Honorary Doctorate of Civil Law at St Petersburg University. This was at a time when women were not even admitted into higher education institutions. It is interesting to note her comments, again to Woodward, in a letter of 1836: 'They have made me a member of the Imperial Natural History Society of Moscow and have sent me a Diploma of the appointment, but it is provoking that no one will believe that a Lady could write such a trifling thing - in this Diploma I am called Domin*um* Etheldred*um* Benett and Mr Lyell told me that he had been written to by foreigners to know if Miss Benett was not a Gentleman ... So you see that scientific people in general have a very low opinion of the abilities of my sex.' (Perhaps times do not change so much. I personally, with the title Dr, have

been lodged in a Cambridge University male hall of residence, much to my amusement. It was similar to Miss Benett's experience. It was assumed I was male, but my experience was only 150 years later! Have we moved on?)

Etheldred Benett was an accomplished painter and in 1825 deposited in the Geological Society of London archives a painting of the meteorite which fell in County Limerick in September 1813, which was subsequently presented to the University of Oxford.

Her publication in 1831 of 'A catalogue of the organic remains of the county of Wiltshire' remains a classic work and contains her drawings and sketches of mollusca and sponges. It was reprinted for private circulation, which was common practice at the time, and was dedicated to Greenough, whom she greatly admired. This work established her as a true, pioneering biostratigrapher, following but not always agreeing with the work of William Smith. It was even cited in the presidential address of Murchison in 1832: 'The year has not passed over without its fruits; and those who know the devotion which Miss Benett has bestowed upon this study, and how largely she has thereby contributed to the successful progress of Sowerby's text-book of the science ... as collected and illustrated by that accomplished lady'. Praise indeed from the president of the Geological Society, when ladies were not even admitted to read their own work.

Etheldred Benett died in 1845 at the age of 69 (two years before Mary Anning, who was only 48 when she died) at her home Norton House, having over a period of 34 years gathered together the finest collection of Wiltshire fossils. Most of her collection was subsequently bought by former Englishman and physician Thomas Wilson of Newark, Delaware, taken to America and eventually donated to the Philadelphia Academy of Natural Science between 1848 and 1852. For many years, it was thought to have been lost but after extensive research by Spamer, Bogan and Torrens at the Academy of Natural Sciences in Philadelphia, it was found and reintroduced to the scientific community in 1989. The collection is extensive and shows the care with which she undertook curatorship. Within the collection are the first fossil molluscs

(*Laevitrigonia gibbosa*) - found in the Portland beds, Upper Jurassic - to have preserved parts of their soft anatomy. This is historic and it is marvellous that the collection has survived. There is also a smaller collection in the Leeds City Museums.

Unfortunately, there are no portraits of this remarkable woman, but a silhouette from her stay in Bath dated 1837 does survive (Fig. 1). Etheldred's later comments to Samuel Woodward are worthy of note. She is portrayed in 'bonnet, cap and velvet spencer you have me; or rather, I should say, you have me not, for I do not think it will give you the least idea of me ... It makes me look at least 10 years older than I am'. It is gratifying to learn that although she was not a follower of fashion, she valued her looks, as do most women!

Etheldred Benett showed that 'a masculine and eccentric, old subject' (here I would prefer to use the term 'woman'), as she was called in 1872, could contribute to a new field science. She may have tried in many ways to live up to her male-sounding Christian name, but she deserves credit for her contribution to the field of geology more than 40 years before women were even admitted to universities in the UK. I think she can be summed up in three words - magnanimous, meticulous and manly. I also detect a quiet sense of humour under that masculine exterior in her letters, which is often sadly lacking in scientific circles these days.

Suggestions for further reading

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